

Amendments to the Claims

Please add new Claims 14-47. The Claim Listing below will replace all prior versions of the claims in the application:

Claim Listing

1. (original) A router for routing data packets comprising:
 - input physical channels for receiving at least portions of the data packets;
 - output physical channels;
 - data buffers, coupled with the input and output physical channels, for storing the portions of the data packets; and
 - control circuitry, coupled with the input and output physical channels and the data buffers, for generating channel assignments in response to queued events, and outputting the portions of the data packets through the output physical channels according to the generated channel assignments.
2. (original) The router of claim 1 wherein the control circuitry assigns virtual channels to the data packets in response to the queued events.
3. (original) The router of claim 2 wherein the control circuitry is shared by multiple virtual channels and activated to handle a particular virtual channel in response to an event.
4. (original) The router of claim 2 wherein the control circuitry further assigns the output physical channels to the virtual channels in response to the queued events.
5. (original) The router of claim 4 wherein the control circuitry is shared by multiple virtual channels and activated to handle a particular virtual channel in response to an event.
6. (original) The router of claim 1 wherein the control circuitry is adapted to generate physical channel assignments in response to the queued events.

7. (original) The router of claim 6 wherein the control circuitry is shared by multiple virtual channels and activated to handle a particular virtual channel in response to an event.
8. (original) The router of claim 1 further comprising:
a multicomputer interface coupled with an input physical channel and an output physical channel such that the router forms a multicomputer router for a multicomputer system.
9. (original) The router of claim 1 further comprising:
a line interface coupled with an input physical channel and an output physical channel such that the router forms an internet switch fabric router.
10. (original) The router of claim 2 wherein the data buffers correspond to input virtual channels which share the input physical channels, wherein output virtual channels share the output physical channels, and wherein the control circuitry generates virtual channel assignments, each virtual channel assignment associating an input virtual channel with an output virtual channel.
11. (original) The router of claim 2 wherein the control circuitry includes:
a state table that associates the output physical channels with input channels.
12. (original) The router of claim 11 wherein the input channels are input virtual channels that share the input physical channels.
13. (original) A method for routing data packets from input physical channels to output physical channels, the method comprising the steps of:
receiving at least portions of the data packets over the input physical channels;
generating channel assignments in response to queued events; and

outputting the portions of the data packets through the output physical channels according to the generated channel assignments.

14. (new) A data communication device comprising:
data buffers that store received data prior to transport; and
control circuitry that controls transport of data, the control circuitry responding to data arrival events and output credit events to store state information with respect to stored data and to allocate resources based on the state information.
15. (new) A data communication device as claimed in Claim 14 wherein events are enqueued for access to the state information.
16. (new) A data communication device as claimed in Claim 15 wherein the state information is stored in a state table having a state vector for each of plural destinations.
17. (new) A data communication device as claimed in Claim 16 wherein each data buffer is associated with a destination.
18. (new) A data communication device as claimed in Claim 16 wherein each data buffer is associated with a virtual channel in a virtual network across network nodes.
19. (new) A data communication router as claimed in Claim 16.
20. (new) A data communication device as claimed in Claim 14 wherein the state information is stored in a state table having a state vector for each of plural destinations.
21. (new) A data communication device as claimed in Claim 14 wherein each data buffer is associated with a destination.

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22. (new) A data communication device as claimed in Claim 21 wherein the association is static.
23. (new) A data communication device as claimed in Claim 14 wherein each data buffer is associated with a virtual channel in a virtual network across network nodes.
24. (new) A data communication device as claimed in Claim 23 wherein the association is static.
25. (new) A data communication router as claimed in Claim 14.
26. (new) A data communication device as claimed in Claim 14 wherein the resources are allocated in a transport event.
27. (new) A data communication device as claimed in Claim 14 wherein the resources include data buffers.
28. (new) A data communication device as claimed in Claim 27 wherein the data buffers correspond to virtual channels.
29. (new) A data communication device as claimed in Claim 14 wherein the received data define at least portions of data packets.
30. (new) A data communication device as claimed in Claim 14 wherein the resources are physical channels.
31. (new) A method of allocating data resources comprising:
storing received data; and

responding to data arrival events and output credit events to store state information with respect to stored data and to allocate data resources in response to that state information.

32. (new) A method as claimed 31 wherein events are enqueued for access to the state information.
33. (new) A method as claimed in Claim 32 wherein the state information is stored in a state table having a state vector for each of plural destinations.
34. (new) A method as claimed in Claim 33 wherein each data buffer is associated with a destination.
35. (new) A method as claimed in Claim 33 wherein each data buffer is associated with a virtual channel in a virtual network across network nodes.
36. (new) A method as claimed in Claim 33 performed in a router.
37. (new) A method as claimed in Claim 31 wherein the state information is stored in a state table having a state vector for each of plural destinations.
38. (new) A method as claimed in Claim 31 wherein each data buffer is associated with a destination.
39. (new) A data communication device as claimed in Claim 38 wherein the association is static.
40. (new) A method as claimed in Claim 31 wherein each data buffer is associated with a virtual channel in a virtual network across network nodes.

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41. (new) A data communication device as claimed in Claim 40 wherein the association is static.
42. (new) A method as claimed in Claim 31 performed in a router.
43. (new) A method as claimed in Claim 31 wherein the resources are allocated in a transport event.
44. (new) A method as claimed in Claim 31 wherein the resources include data buffers.
45. (new) A method as claimed in Claim 44 wherein the data buffers correspond to virtual channels.
46. (new) A method as claimed in Claim 31 wherein the received data define at least portions of data packets.
47. (new) A method as claimed in Claim 31 wherein the resources are physical channels.